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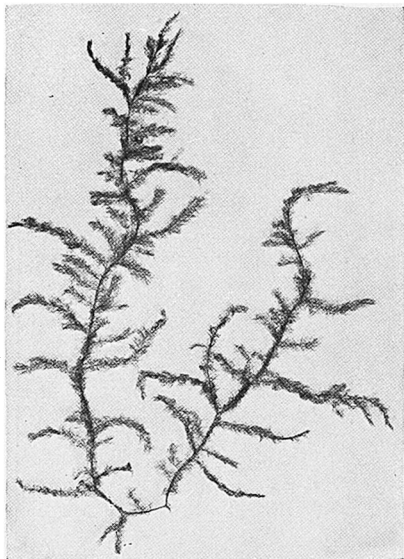
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## THE ARTISTIC VALUE OF SEAWEEDS

BY HELENA LEEMING JELLIFFE

*Illustrated by direct reproductions of preserved specimens.*



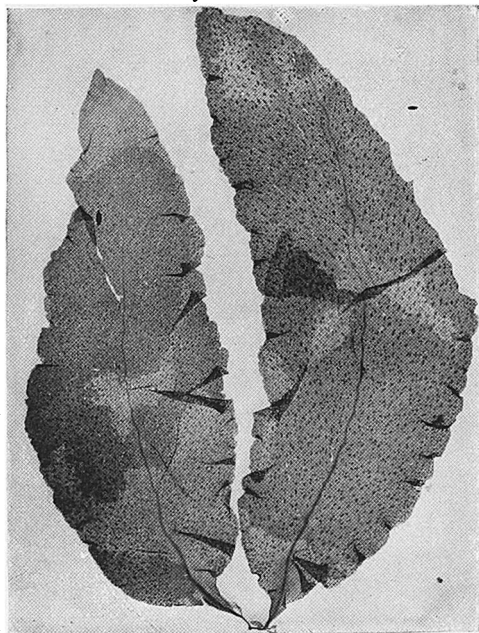
CHENILLE-WEED (*DASYA ELEGANS*)

Americana). As the former floats in shallow water every hair-like frond is unfurled, and every shade of its rich crimson-lake color is revealed; but the moment it is cast up it becomes a dark clotted spot without shape or shade.

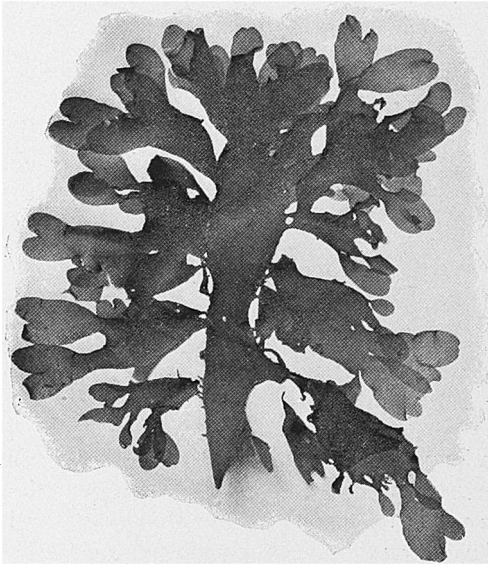
The ribbon-plant is beautiful even when the wrack of waves, but to see it in perfection one should go in a little boat, —preferably a salty old dory which one need not hesitate to poke in and out among the barnacled and encrusted piles of wharves, where, below the lowest tide-mark, the ribbons grow. Peering over the edge of the dory one can detect through the dark green waters great bunches of them, —rosy red in color, with their fluted edges softly undulating in the slow deep currents. A sharp stick will separate the bunch from the pile, if it grows too deep to be reached with the bared arm, and it will come floating up to the surface in all the loveliness of its natural grace.

It is enough in the first joy of summer relaxation on the coast to watch the waves, silvering the beach and marking their curved boundaries with edges of foam, then receding and mysteriously slipping away in the sand; but if one is blessed with many mornings to stroll by the sea, there is a new delight to be found in looking through the shining water at the floating treasures it is bringing to the land. Every storm bears up the fragile seaweeds that grow in deep water, and floats them to the shore, spreading out their filmy beauty in every conceivable form of grace, furnishing the artist with many a suggestion toward decoration, and then leaving them in a little mass of color for the sharp eye of some "minute philosopher" to recognize as a treasure to be unfolded again.

Among the most beautiful seaweeds of the North American waters, are the chenille-weed (*Dasya elegans*), and the ribbon-weed (*Grinellia*



RIBBON-WEED (*GRINELLIA AMERICANA*)



PHYLLOPHORA BRODIAEI

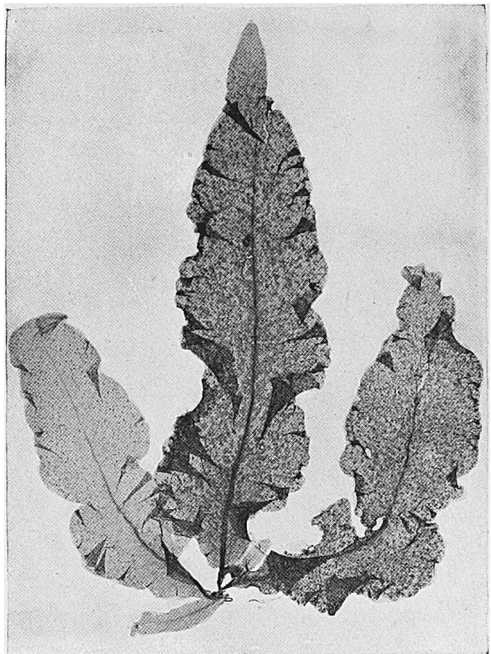
But not all of the deep-water seaweeds can be so easily reached. The red-leafed weed *Phyllophora Brodiaei*, grows in five or ten fathoms of water, and it is only when dredging-machines scrape the sea-bottom of its treasures that it can be obtained from its native place; but the storms strew fragments on our northern beaches, for those who are not invited to dredging-parties.

There is one charming seaweed which grows all along the coast. It needs neither dredging-machine nor dory, but only a pair of stout shoes and the ability to walk on slippery stones; for near the low-tide mark, if one follows the ebbing waves, there may be seen purple ribbons floating in the water, which sink to a slippery dull-brown covering for the rocks, when the tide bares them. This is the porphyry-weed (*Porphyra laci-*

*niata*). Its name comes from its delicate brown-purple color, which is sometimes mottled crimson, sometimes pale violet, like the precious porphyry-marble. This "laver" is used by the Chinese for soups; and our Mongolian laundrymen, quite ignorant of the fact that it grows in ample quantities all along our coasts, import it from China, as an article of native diet.

The Chinese are by no means the only nation that has learned that some sea-weeds are good for food. The Irish moss or carrageen, as those of the true brogue call it, is often used to make blanc mange. It is the very common *Chondrus crispus*, that grows like little bushy shrubs on rocks at low water. If it is always covered with water, it is reddish or purple, and sometimes green, having a beautiful gradation of colors; but when exposed to the sunlight, or cast upon the beach, it bleaches to a pale yellow. Although the druggists and grocers sell it much as they would gelatine, there is no need to seek the privilege of paying for this little luxury, for after the fresh pieces on the shore have been washed free from sand and dried, and boiled in milk, they make a delicious jelly-like dish.

In old days the cry "Dulse and



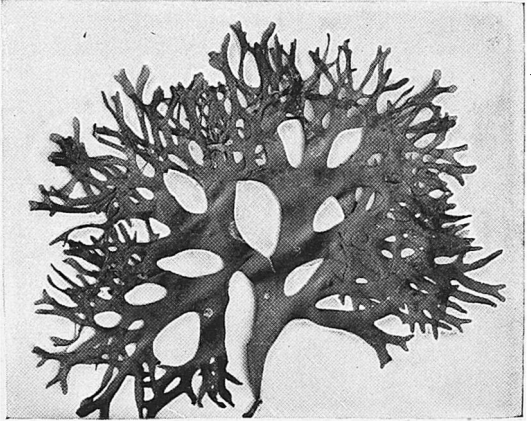
PORPHYRY-WEED (PORPHYRA LACINIATA)

tangle! was frequently heard in the streets of Edinburgh, and the dulse is eaten in this country to-day by the Irish population; but like the Chinese they import it from afar, unmindful or ignorant of the fact that it is found in large quantities along the rocky coasts of New England, where it goes under the scientific name of *Rhodymenia palmata*.

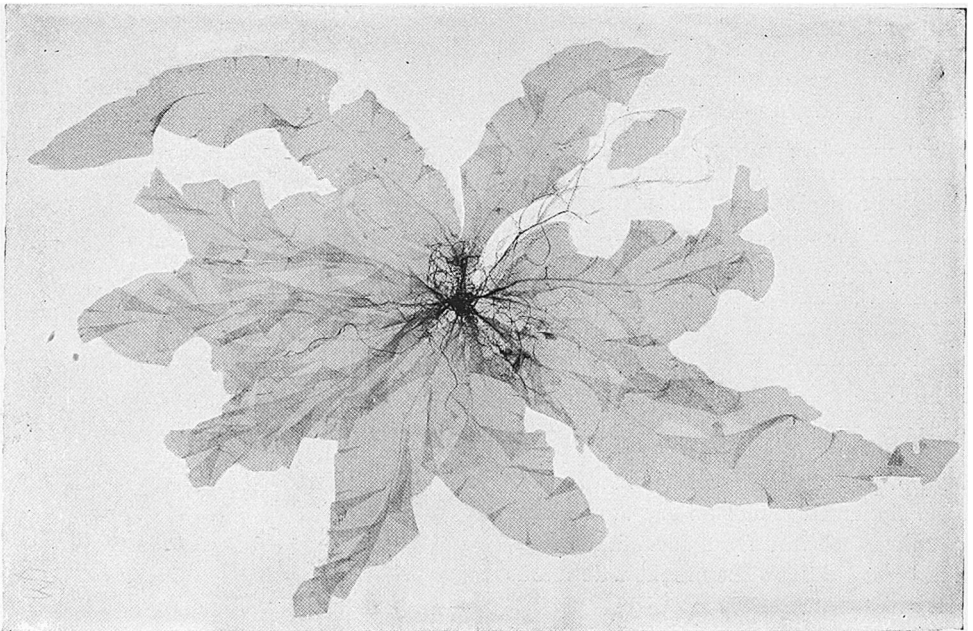
The mucilaginous substance in the seaweeds, which makes some of them really appetizing as well as nutritious, is the quality which also makes them so convenient as objects for the botanical or artistic collector, since they can be mounted on paper by means of their own natural gum.

Even the finest and most delicate of all of the seaweeds, the *Callithamnions*, that float like a shell-pink mist in the water, have enough natural mucilage to make them stick to a sheet of paper as though they were painted on it.

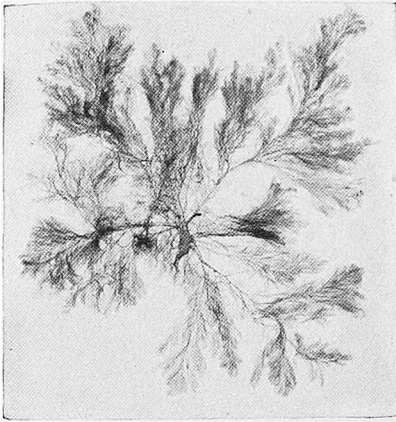
All that is necessary is to wash the seaweed well to free it from sand and fragments of other seaweeds, and then to float it in a basin of fresh water. This brings out the adhesive element. After making the seaweed take its most artistic shape in the water, a sheet of white paper can be slipped boldly underneath it, and it can be coaxed by means of long-handled pins or a camel's-hair brush, to lie on the white surface in almost the same position. A piece of smooth cotton over the specimen, and blotting-paper on both sides, with a moderate weight, is all that is needed to make a good mount. From such specimens, in the writer's collection, all the



IRISH MOSS (*CHONDRUS CRISPUS*)



*GRINELLIA AMERICANA*



CALLITHAMNION AMERICANUM

This beautiful brown seaweed is cast ashore in fragments that are several feet long. The Sargasso sea takes its name from great masses of it floating in tangled mats in mid-Atlantic, generally eastward of the middle part of the Gulf Stream. It is kept afloat by the leafy appendages which spread from its stem, and by

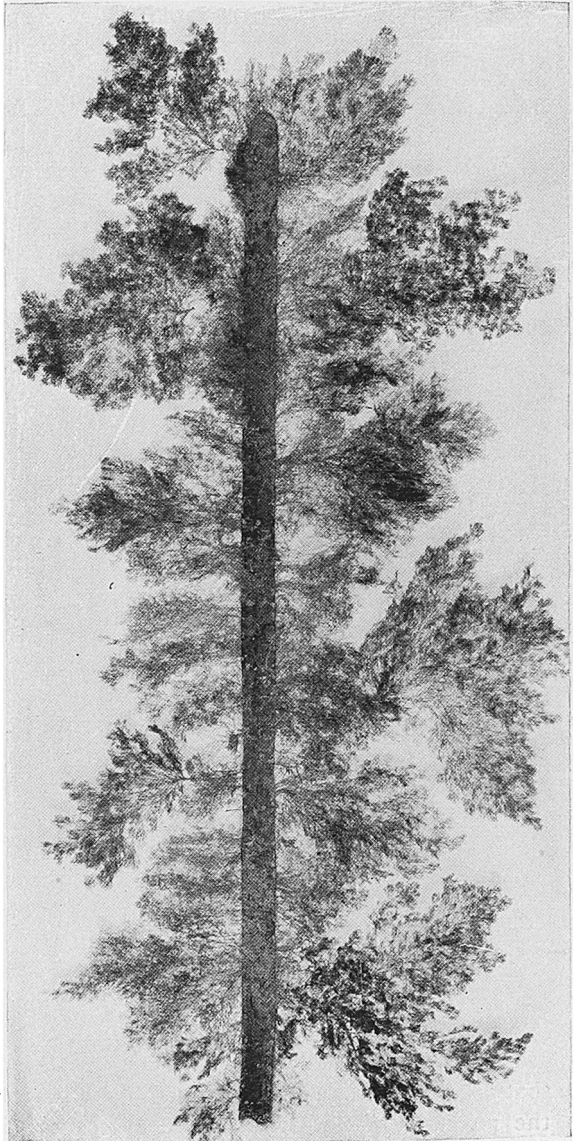


DULSE (RHODYMENIA PALMATA)

many little grape-like bladders filled with air. The *Macrocystis*, a giant among seaweeds, does not grow in northern waters, but in the southern

accompanying illustrations were directly reproduced.

Some of the large seaweeds are harder to manage, because they are so heavy that, after being pressed like any plant, they must be fastened down to the paper. The rock-weed, with its pin-pricked swollen ends and snapping bladders, that covers the rocks of the coast everywhere, needs such treatment; also the *Sargassum*, floating without a root in the deep sea.

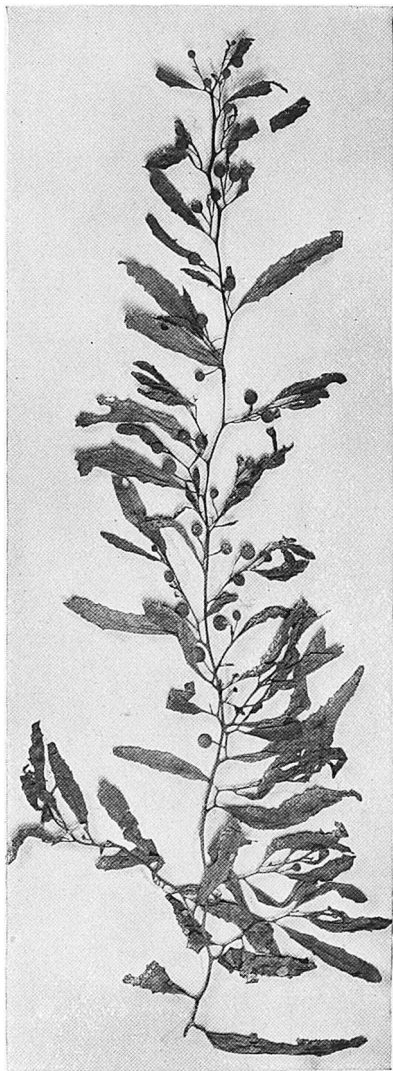


CALLITHAMNION BAILEYI



seas it sometimes forms a bed three or four hundred feet long.

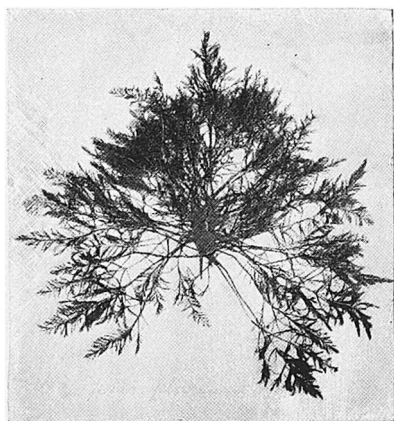
To mount such a seaweed as *Polysiphonia* requires patience and dexterity, for the perfect grace of the floating specimen must be caught unawares or it will collapse into a stringy mass; but by patiently working each detail in place



SARGASSO-WEED (*SARGASSUM VULGARE*)

with a brush the fine branches can be painted into position, and the pressed specimen will be as delicate as an etching, which, indeed, it will resemble.

Those who get the greatest enjoyment from seaweed collecting, do not take only what is cast at their feet in fragments, but follow the ebbing tide down to the very gates of the "weedy sea," and gather the perfect plants as they grow attached to bits of shell on muddy flats, or cling by their disc-like roots to the rocks, or thrive in the pools left by the tide. Speaking generally, the bright green weeds, such as the long narrow green *Ulvas*, and the feathery tufts of *Bryopsis plumosa*, grow on stones or shells on the beach between tide-marks. The olive-brown weeds seem to prefer the low-tide region, while many of the red seaweeds grow in deep water. An exception to this rule is found in the



*BRYOPSIS PLUMOSA*

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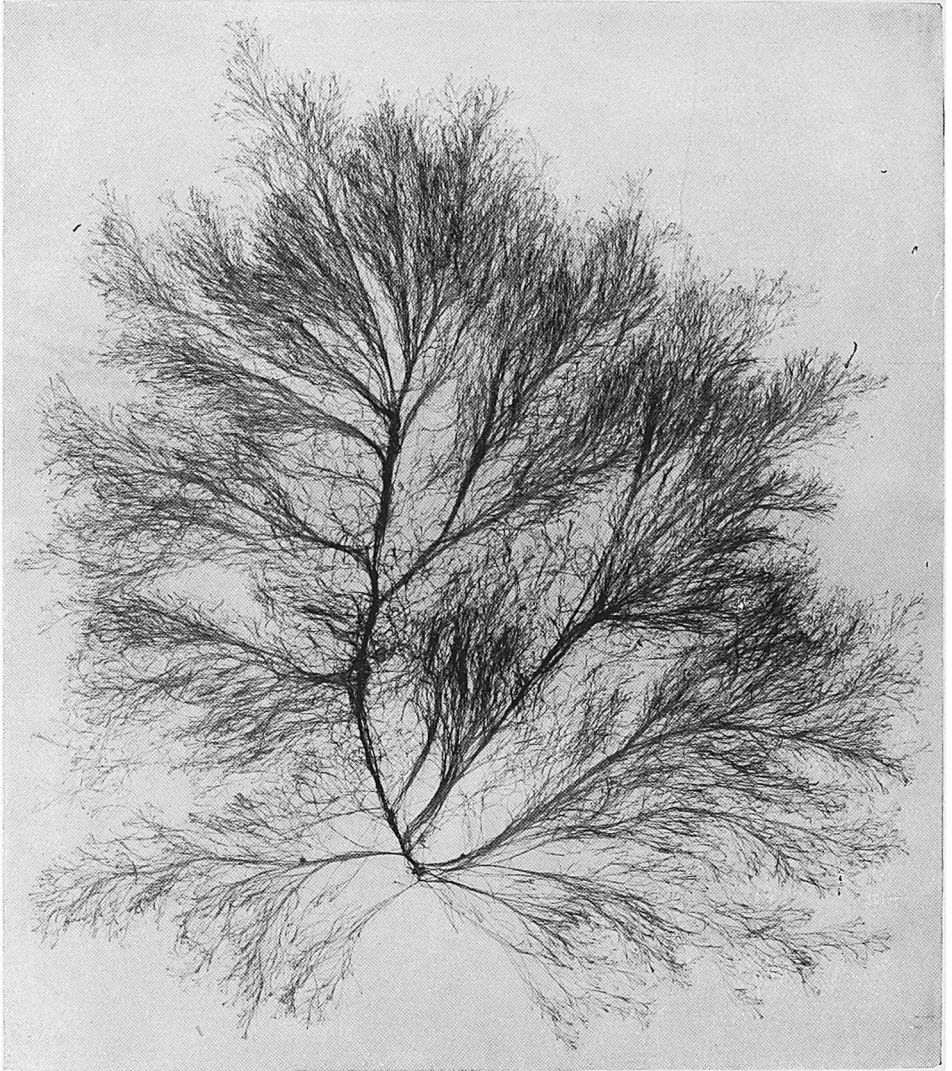
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*MACROCYSTIS PYRIFERA*

over the tide-forsaken beds of shallow bays or around wharves anywhere on the eastern coast, south of Cape Cod, will be rewarded by finding this red seaweed growing perhaps two feet long and densely branched, and springing from one sucker-like disc attached to a stone. At the very edge of the beach, where the tide turns, will probably be found the slender curving branches of *Chondriopsis tenuissima*, another richly red species, five or six inches long.

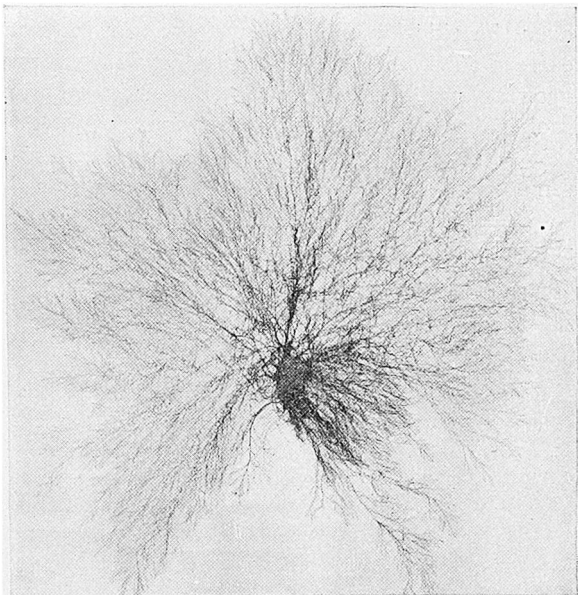
But by far the most beautiful places in which to collect seaweeds are along the rugged portions of the New England coast. There, if the enthusiastic lover of the



SIPHON-WEED (*POLYSIPHONIA URCEOLATA*)

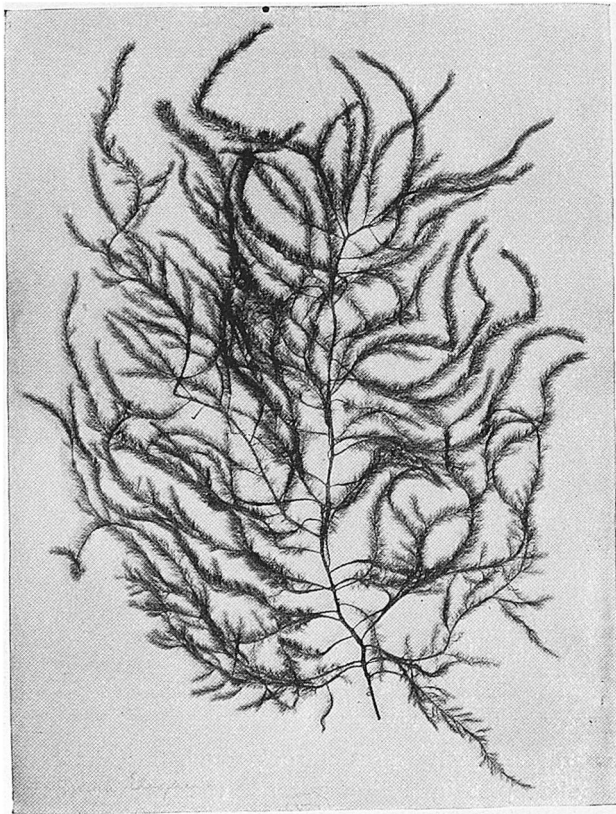
beautiful can pick his way over barnacles and masses of rock-weed, to the places where the receding tide has left cool deep basins full of water in the hollows of the rocks, will be found all forms of sea-life. The green prickly sea-urchins lie in

tangles of red *Ceramium* and pink *Callithamnion*, and the limpets, sticking to the walls of the rocks, are overshadowed by the crimson fringes of *Dasya*. Possibly there will be the rare and beautiful species *Lomentaria rosæ*, growing on the black shell of a mussel, with its pod-like branches. Star-fish lie among the pink and purple fronds of the Irish moss, and little darting things scuttle away from the sunny depths of these brilliant forests to the darker shadows under the rocks. Who can withstand the temptation to put some of the fine filmy things in little vials of salt water, and carry them carefully home to be examined under the microscope, named and mounted as a perpetual reminder of the summer and



CALLITHAMNION AMERICANUM

the sea-gardens?

CHENILLE-WEED (*DASYA ELEGANS*)

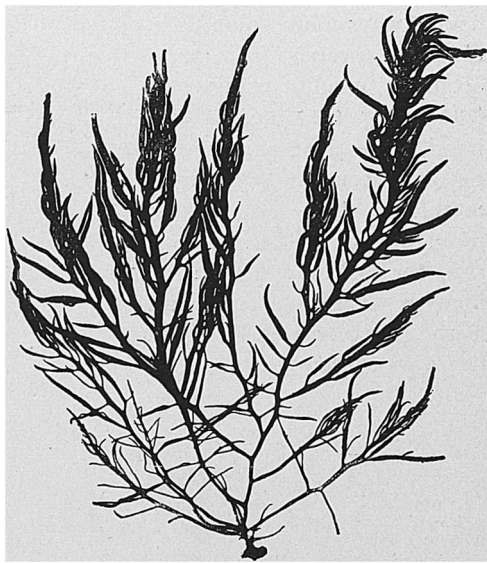
But the seaweeds do not only line the rocky pools and vie with the barnacles in adorning the piles of wharves; the fine and delicate kinds often grow on stouter seaweeds, and are securely anchored in the pathway of the tide by their stronger neighbors. *Euthora cristata*, which is one of the loveliest of the rose-red seaweeds cast upon our eastern beaches, grows in the deep sea under eight or ten fathoms of water, but it is attached to the roots of the stout devil's-apron, which sometimes reaches a gigantic length,—several hundred feet. As long as this delicate plant clings to the apron-strings of its protecting genius, it is safe, but if once it loses its hold it floats up and becomes the prey of the waves.

Where the running tide makes for itself a shining path amid the vivid green lights and mysteri-



ous shadows of the salt-marshes that fringe our sandy shores, there grows in the channels and in the rippling shallows, a long narrow water-plant that is not a seaweed but is known as "eel-grass." It is brown and flat like a rubber-band that is much the worse for wear. A scarred and shabby ribbon it seems to be when pulled up from the bed, where it grows in great tangles slimy to the touch and endless in length. It does not appear at first sight a treasure to be prized, but if a few inches of it be floated out in still water, there will be unfurled here and there along its edges delicate fronds of fine seaweeds that could not grow in the rushing path of the tide, were they not fastened to the eel-grass.

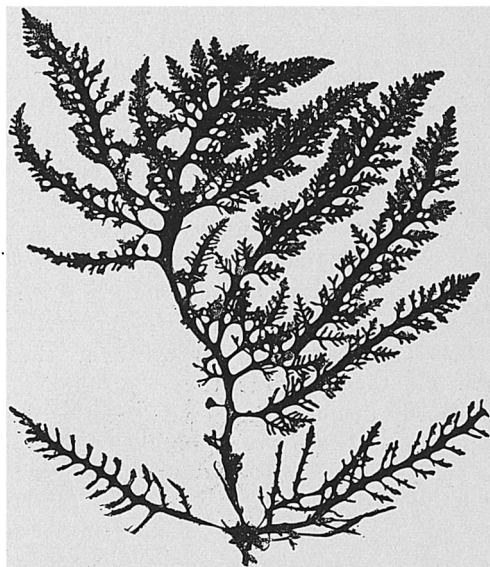
One of them is a small blackish-red



RHADONIA TENERA

alga, in frisky independent little tufts, like small bushes. This is one of the siphon-weeds (*Polysiphonia* Harveyi).

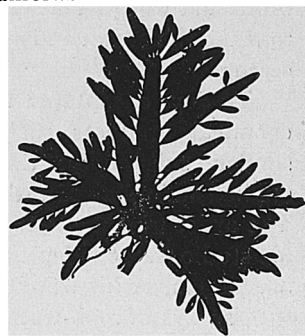
Sometimes the "basket-weed" (*Spyridia filamentosa*) leaves the wharves and deep-water mud, and comes to swing its baskets of spores on the bands of the eel-grass. It is a beautiful species when growing, but it loses something of its grace when pressed. There may often be found on the eel-grass, several species of fine red *Ceramium*, having a pair of microscopic claws at the end of every branchlet, and marvellous bands of red alternating with transparent bars. When this fragile thing is ready to fruit it hangs out innumerable little urns filled with crimson-spores; hence its Greek



CHONDRIOPSIS TENUISSIMA

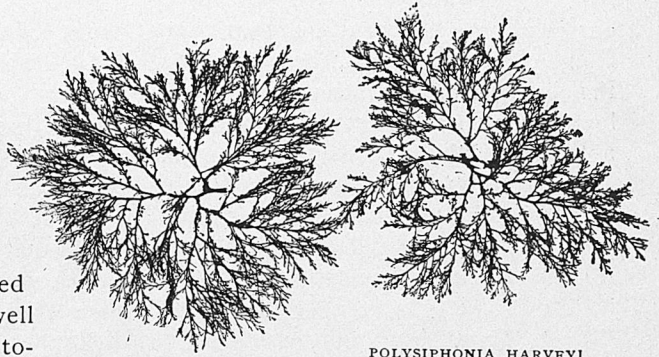
name. Fastened to the strong bands of the eel-grass these little rosy plants float with the tide, dropping their rubies to sow a greater profusion on rocks and piles and other grass-beds until, loosened by storms, they are cast ashore, and make the beach resplendent with their mats of crimson, among the emeralds and porphyries of other treasures of the sea.

The humble folk of the earth living near the shore



LOMENTARIA ROSÆ

have always made some use of the seaweeds, from the economic need of using the first thing that comes to hand, instead of seeking a better but more expensive material. The long cord-like stems of the Devil's apron, for instance, have served many a savage fisherman as well as the finely twisted lines of to-day have served the modern an-



POLYSIPHONIA HARVEYI

glers. At least they have enabled the fisherman to land his dinner, which cannot always be said of the most faultlessly constructed reel and line.

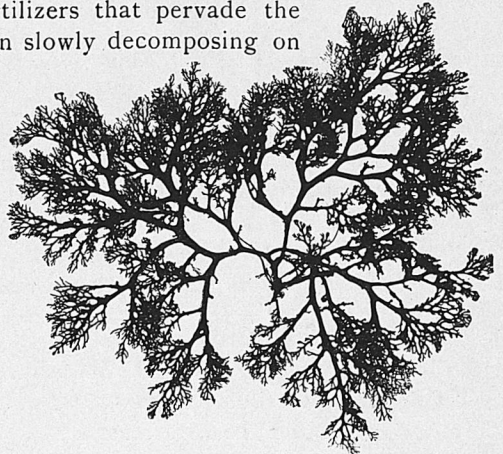
An apology for a fire may be made from the heaps of seaweeds that lie browned and blackened by the sun above high-tide mark; but he must be a very poor creature in this well-provided earth who needs to depend either for food or fuel upon the curious growths of the sea. Nevertheless, many of our New England farms, on which our Puritan ancestors laid the foundation of thrift, were ferti-



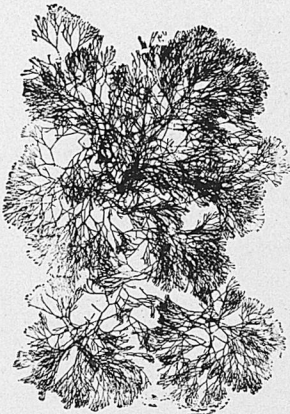
BASKET-WEED (SPRYDIA FILAMENTOSA)

lized with seaweeds which were carted from the shore and strewn over the land, before the days of the patent fertilizers that pervade the atmosphere with their scientific odors. In slowly decomposing on the soil the seaweed gave to the earth elements that entered into the peas and beans and wheat, that in their turn helped to make the brawn and muscles of our ancestors.

To-day, except that they yield certain chemical products such as iodine and similar substances, the seaweeds are studied and admired rather than utilized. The artist who sketches on the shore has his studio festooned with long wreaths of Sargassum, or his fish-net drapery looped with sprays of rock-weed with their bursting bladders. Dry and stiff as they be-



EUTHORA CRISTATA



CERAMIIUM STRICTUM

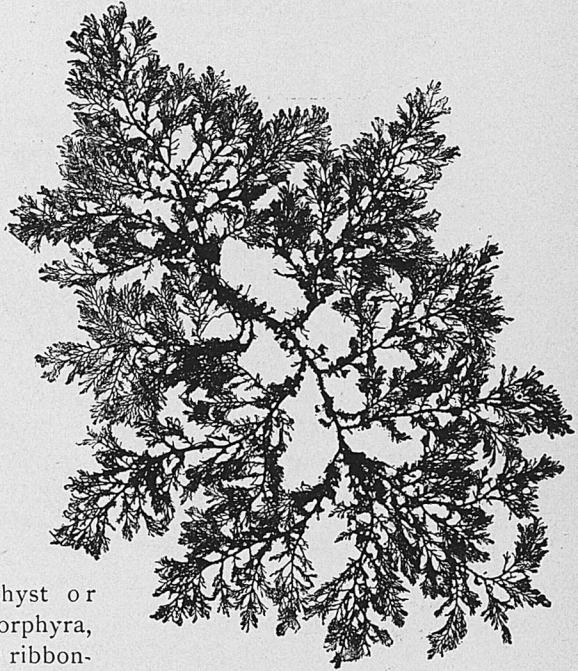
shore where they can obtain the fresh studies, often get as good effects by mounting the sea-weeds on paper cut in such shapes as to represent the saucer or plates or platter to be painted; and as nearly all kinds keep their color perfectly, they can be copied as if from a design.

But the true seaweed-lover is he who cares for them enough to know them as individual friends, not merely as bright masses of color. He learns the haunts of each species, and by the aid of the microscope discovers the marvelous beauty of the individual

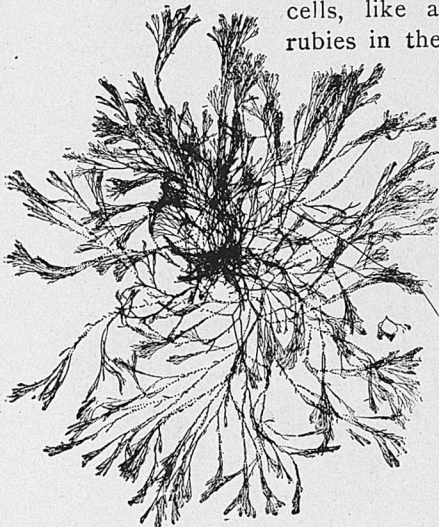
cells, like amethyst or rubies in the

Porphyra, or ribbon-weed; and of the fine-

ly jointed branches; and the curious shapes of the spores hung in baskets or imbedded in the surface of the weeds. He ponders over the questions why the huge Sargassum has no root; why the bright green seaweeds always grow in shallow water where they get the sunlight, and the red ones are nearly always below the mark of the lowest tide; how certain warm-water species happened to get into little warm coves that were dammed up, north of their natural limits; and, above all, which seaweed was the ancestor that in the course of slow evolution, gave rise to the first land-plants.



POLYSIPHONIA NIGRESCENS



CERAMIIUM STRICTUM